

Grade 8 Science – Systems in Action - Work/Simple Machines Worksheet

Name: _____

1. What is work?
2. Give an example of when work is not done when a force is applied.
3. What is the equation or formula for WORK?
4. The symbols (variables) stand for the following $W =$ _____; $F =$ _____; $D =$ _____
5. What is a Machine?
6. What is a Simple Machine?
7. What are the 6 types of simple machines?
8. Machines cannot increase the amount of _____, they only make the work _____ to do.
9. A device (does / does not) have to contain a motor to be a machine.
10. When a machine is used, _____ force is needed to do the work, but that force must be applied over a _____ distance.
11. State the Law of Conservation of Energy.
12. Does work output equal work input? Explain.

Solving problems using $F = W \times D$

1. How much work would be done on book weighing 1.0N lifted 2m?
2. How much work would be required to push a box requiring 15N of force over a distance of 3 m?
3. It requires 50 Joules of work to move an object 5m, how much force is required?
4. A force of 100 Newtons was required to lift a rock. A total of 150 Joules of work was done. How far was the rock lifted?
5. It took 500 N of force to push a car 4 metres. How much work was done?
6. A young man exerted 9000N of force on a stalled car for 18 minutes but was not able to move it. How much work was done?